Implementing an Asset Valuation System for Local Roads in the Philippines

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Abstract: The management of local roads is a mandate that was devolved to local governments of the Philippines. However, this decentralization of local road management did not come with the necessary funding mechanism to allow local governments to sustainably finance major capital works for their local road network. The limited resources for capital outlays and organizational capabilities increase the fiscal burden of local governments constraining their ability to deliver frontline public goods and services. It is in this context that this paper aims to present and discuss how an asset valuation system for local roads will improve the local fiscal system as a critical pillar of the local governments in the execution of its mandates. The paper will also detail the needed national inventory database system for local roads, which will serve as the principal basis for local road asset valuation. Ultimately, asset valuation and the local road inventory will be an important leverage for local governments as the National Government proceeds with the policy direction of sub-sovereign transfer financing of capital works and outlays for core local road network, particularly those that impact national development objectives. The paper will similarly show that the registration of local road infrastructure as an asset in the books of account (registry of public infrastructure) will improve the consolidated fiscal position of a local government. This will then in turn strengthen the creditworthiness of local governments, for which they can use in the credit financing of local road infrastructure development. Lastly, the paper seeks to propose prudent next steps that will make local road networks an avenue of inclusive growth across the country.

Key words: Local Road Management Mandate, Road Asset Valuation, Road Asset Depreciation, Road Asset Management

1. INTRODUCTION

The local government units (LGUs) in the Philippines have administrative jurisdiction, funding mandate and management responsibility over local roads as envisioned and implemented by Republic Act No. 7160, otherwise known as the Local Government Code of 1991. In spite of this devolved mandate, LGUs were not given the necessary financing mechanism to sustainably build and maintain their local road network. Coupled with other unfunded mandates, the LGUs have been unable to fully execute local road service delivery.

Implementing an asset valuation system for local roads can be seen as one of the key governance reform to improve the local road management (LRM) functions of LGUs across the country. The inventory of local roads and the consequent valuation and booking of these road assets will allow LGUs to practically know where its road network are, capitalize the value of local investments to their local roads, and properly know how much is the needed funding envelope to sustainably develop and maintain such local road network.

2. LOCAL ROAD NETWORK IN THE PHILIPPINES

In 2013, there are 31,620.213 km of provincial roads, for which 32.737% are paved (66.778% unpaved). Likewise, city roads have an aggregate length of 15,247.390 km with 61.984% of these roads being paved (35.313% unpaved). The provincial and city road inventory for 2013 is summarized in Table 1 and illustrated in Figure 1 as recorded and collated by the Department of the Interior and Local Government (DILG). The DILG provides technical support and assistance to LGUs in the area of local road management.

Table 1. Inventory of City and Provincial Roads (in km) as of 2013

Local Roads	Total Length	ROAD SURFACE TYPE			ROAD SURFACE CONDITION		
		Paved	Unpaved	*No Data	% Good-Fair	% Poor-Bad	*No Data
Provincial Roads	31,620.213	10,351.600	21,115.353	153.260	21,245.764	6,042.297	4,332.152
City Roads	15,247.390	9,450.998	5,384.311	412.133	8,702.571	2,396.585	4,148.176
Total	46,867.603	19,802.598	26,499.664	565.393	29,948.335	8,438.882	8,480.328

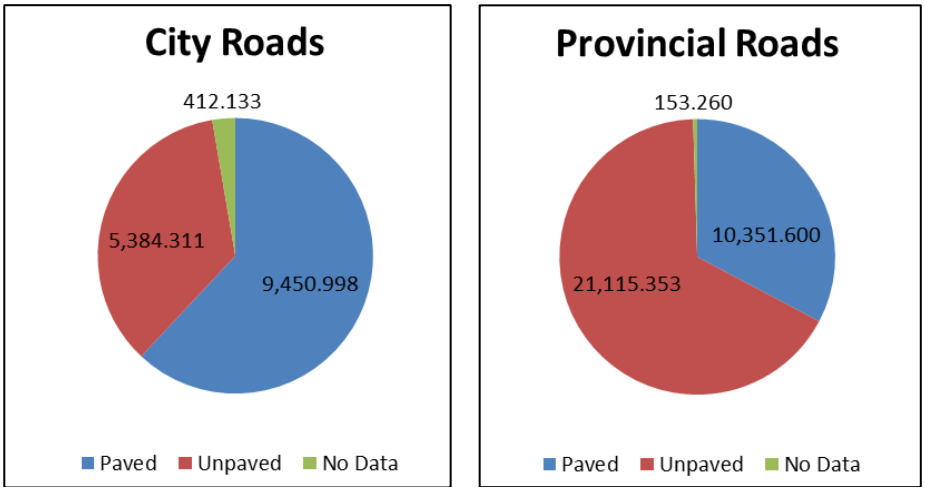


Figure 1. Surface Type of City and Provincial Roads as of 2013 (in km)

In contrast, the country has 31,597.68 km of national roads as listed by DPWH in its road atlas in 2012. In terms of pavement, 80.52% of the national roads are paved, while 19.48% are unpaved. Due to local fiscal constraints, most LGUs have difficulty ensuring their local road network provides the necessary accessibility and mobility for people and goods under their jurisdiction.

3. REVIEW OF RELATED LITERATURE

There seems to be sufficient body of literature on road asset management in the Philippines. However, these are in the context of asset management for national roads and road infrastructure asset management practices in general. In general, assets have to be inventoried, valued, and accounted first before the actual practices and approaches on asset management, preservation and maintenance are applied. These series of first steps is what is lacking in the local literature on road asset accounting and valuation particularly for local roads in the Philippines. A methodology nor a guideline is non-existent prior to the reforms in local road management by the Government of the Philippines through the DILG.

Wood and Metschies (2006) stated in their ADB Study on Road Asset Management stated that "the initial construction of a road is capital investment. Once the investment is made, however, the country concerned ought to be able to maintain the investment. If the country concerned cannot afford to maintain it, the country cannot afford to obtain it." The study further noted that "a base target of 2.0% to 2.5% of the asset value based on reconstruction cost should be allocated

to routine and periodic maintenance annually. If such funding is not available, effort should be directed toward determining how it can be made available."

However, there is an underlying assumption here, that the country – national government agencies and local government units – are able to properly value the true cost of road construction and sufficiently depreciate the valuation thereof in its official books of accounts. This may be happening at the national level but certainly not at the level of local governments.

The same study (Wood and Metschies, 2006) reference an asset valuation of the Philippine Road Network by categories of national and local roads (see Table 2). The asset calculation used the replacement value methodology using a standardized unit construction cost per km multiplied by the network length. The utility of this valuation is adequate for estimation purposes but the true asset valuation recorded in the books of accounts should include depreciation and any other impairment on the road with the actual valuation based on surveyed road conditions.

Table 2. Asset Value of Philippine Road Network

Asset Calculation

TOTAL ROAD NETWORK	Network Length[a]		Unit cost per km[b]	Replacement Value (RV)		Budget Required based on 2.5% of Asset Value		Present[d]			Required	
								Maintenance Expenditure (routine+periodic)	Maintenance Expenditure over Replacement Value		Maintenance (routine + periodic)	Surplus or Shortage
Raoad Class / Surface	[1]		[2]	[3] = [1]x[2]		[4] = [3]x2.5%		[4]	[5] = [1]x[4]	[6] = [5] / [3]	[5][e]	
	km ('000)	%	USD/km	US$ million	%	US$ Million	Peso Million	USD/km[c] p.a.	US$ million	per road classification	US$ million	US$ million
DPWH - National Roads (2007)	***30.0***	***100%***		***11,148***	***50%***	***278.70***	***11,148***		***306.5***	***2.75%***	**285.2**	**21.3**
Concrete	13.4	45%	512,000	6,861		171.52	6,861	13,953	187.0			
Asphalt	7.5	25%	426,000	3,195		79.88	3,195	11,851	88.9			
Gravel	9.1	30%	120,000	1,092		27.30	1,092	3,368	30.7			
LOCAL GOVERNMENT												
Provincial Roads (2000)	***27.1***	***100%***		***3,254***	***15%***	***81.34***	***3,254***		***27.1***	***0.83%***	**247.8**	**-143.3**
Paved	5.7	21%	308,000	1,756		43.89	1,756	1,000	5.7			
Unpaved	21.4	79%	70,000	1,498		37.45	1,498	1,000	21.4			
City Roads (2000)	***7.1***	*100%*		***2,571***	***11%***	***64.26***	***2,571***		***13.4***	***0.52%***		
Paved	5.5	77%	447,000	2,459		61.46	2,459	2,000	11.0			
Unpaved	1.6	23%	70,000	112		2.80	112	1,500	2.4			
Municipal Roads (2000)	***15.8***	***100%***		***2,550***	***11%***	***63.76***	***2,550***		***15.8***	***0.62%***		
paved	5.4	34%	376,000	2,030		50.76	2,030	1,000	5.4			
unpaved	10.4	66%	50,000	520		13.00	520	1,000	10.4			
Barangay (2000)	***122.0***	***100%***		***2,903***	***13%***	***72.58***	***2,903***		***48.2***	***1.66%***		
paved	8.5	7%	208,000	1,768		44.20	1,768	1,000	8.5			
unpaved	113.5	93%	10,000	1,135		28.38	1,135	350	39.7			
Subtotal LGU									**104.5**			
Total	**202.0**			***22,425***	**100%**	**560.63**	**22,425**		**411.0**	**1.83%** [f]	**533.0**	
Key Ratio of Total Road Network :										**Replacement Value / GDP (22,425/ 98,540) =**		**0.228**

a Source : DPWH 2003 (JICA)
DPWH - Department of Public Works and Highways; JICA - Japan International Cooperation Agency

b Source: National Roads - DPWH-Project Management Office
Provincial Roads: paved, 90% price of national roads;
unpaved, 30% price of national roads
City Roads: DPWH-PMO
paved, 50% price of
unpaved, 33% price of paved
Municipal Roads: paved, 110% price of national roads asphalted
unpaved, 33% price of paved
Barangay : paved, 67% price of provincial paved roads
unpaved, Consultant's estimate

c Source : DPWH - Bureau of Maintenance, for paved and gravel
for unpaved, Consultant's estimate

d: Note : "Most of the Present expenditure is devoted to Routine Maintenance only"
(WB-Report May 19, 2005; Philippines, p183)

e: Note: ADB and WB-Report 2005, p173; figures for 2003

f: Conclusion: Present Maintenance Spending at DPWH & DILG is insufficient
(below 2.5% benchmark)

Note : Expressways and major bridges excluded

2006 GDP : US$ 98.54 billion = Pesos 3,941.6 Billion
US$ 1 = 40 Pesos

Canares (2015) drafted a guideline on Provincial Road Asset Valuation with inputs from the Department of Public Works and Highways (DPWH), DILG, COA, and the Institute of Public Works Engineering in Australia (IPWEA). Road asset accounting is a problematic practice in the Philippines. The most recent guideline in road asset accounting was the New Government Accounting Systems (NGAS), which was promulgated in 2001 through COA Memorandum Circular No. 2001-005. While the NGAS, through the NGAS Manual, prescribes the rules in accounting for road assets, the corresponding effect on financial statements is severe once the road assets are completed. Road assets on construction are debited to a Construction in Progress account but this is eventually closed to Government Equity account upon road asset completion. As a result, road assets are no longer valued in the financial statements but are only disclosed as Public Infrastructure in the Notes to Financial Statements.

This accounting treatment has several effects. Road assets are no longer treated as assets but expenses, theoretically, as the values are closed against the equity account. Correspondingly, monitoring these assets become virtually impossible because they are not considered as part of

the fixed assets inventory, and thus, are not provided with depreciation. While road condition of the province has improved because of the rehabilitation, the provincial road's value (represented by its equity account) decreased because the assets are technically charged against the equity account. Under normal circumstances, this could not have been possible. Asset acquisitions should have increased the net value of a local government unit.

On 19 October 2009, the Department of Finance (DOF) issued Department Order No. 37-09 prescribing the Philippine Valuation Standards (PVS). This guideline on the valuation of physical assets mandated the following: (i) Recognized principles & concepts; (ii) Best practices in valuation services & reporting; and (iii) Accepted definitions on asset valuation. More importantly, the PVS prescribed three (3) market-based valuation approaches: (i) Sales Comparison; (ii) Income Capitalization; and (iii) Cost. Unfortunately, however, the guideline did not recommend a valuation methodology for road infrastructure assets. In this paper, nonetheless, the cost approach is used with straight-line depreciation for the valuation and accounting of local road assets.

4. ROAD ASSET MANAGEMENT

Local roads are one of the most important public assets of LGU. The construction of these local road assets entails a significant amount of capital investment from the LGU. Completed local roads facilitate access to local markets and local government services. It also allows the general mobility of people and goods at the community. Hence, there is a need to preserve and properly manage these local road assets if the benefits from the use of the local road are to be sustained.

Local road assets can preserved and managed through the timely implementation of routine and periodic maintenance. Without such interventions, road assets will result to deterioration, reduced usability of the road, and high costs for reconstructing failed sections (maintenance costs is significantly less expensive than new construction or rehabilitation). Damage as a result of lack of maintenance will mean reduced benefits and higher travel cost to road users. Deteriorated roads will increase vehicle operating costs due to frequent repairs and higher fuel consumption, which would then discourage or would act as disincentives for transport operators to provide service to passengers and to carry goods from production area to the market. The American Association of State and Highway Transport Officials (AASHTO) defines the service life cycle of a road as:

a. **Design.** This stage deals with dimensions, type of materials, thickness of base and top surfaces, and the drainage system. Investments made at the design stage affect the long-term durability of the pavement surface. If, however, sufficient funding is not available to upgrade the design, the road starts out and stays mediocre;

b. **Construction**. A high-quality construction process produces a longer-lasting pavement surface;

c. **Initial Deterioration**. During the first few years of use, the road surface starts to experience some initial deterioration caused by traffic volume, rain, snow, solar radiation, and temperature changes. At this stage, the road appears in good condition, providing a smooth ride. Preservation strategies at this stage will sustain the smooth ride, preserve the foundation, extend the life, and reduce the need for costly reconstruction later on;

d. **Visible Deterioration**. Visible signs of distress such as potholes and cracking occur. Repairs made at this stage using overlays and milling to eliminate ruts will restore a smooth ride and extend the life of the road; and

e. **Disintegration and Failure**. Roads that are not maintained during the initial deterioration stage and repaired when visible deterioration occurs will fail and

will need costly reconstruction. Once a road's foundation disintegrates, surface repairs have an increasingly short life.

A sample graph of a service life cycle of a road, as illustrated by the U.S. Department of Transportation, is shown in Figure 2. Asset preservation strategies as road maintenance prior to the point of rehabilitation will mean lower cost but at a higher benefit as pavement condition can easily be restored. Whereas, at the point of rehabilitation and reconstruction, the pavement condition that has to be repaired is large necessitating a larger investment for the part of the government. With the tendency of LGUs to underinvestment in local road maintenance, it is naturally logical that the LGUs will need more capital to restore local roads that are in a state of disrepair as exemplified by the said life cycle graph.

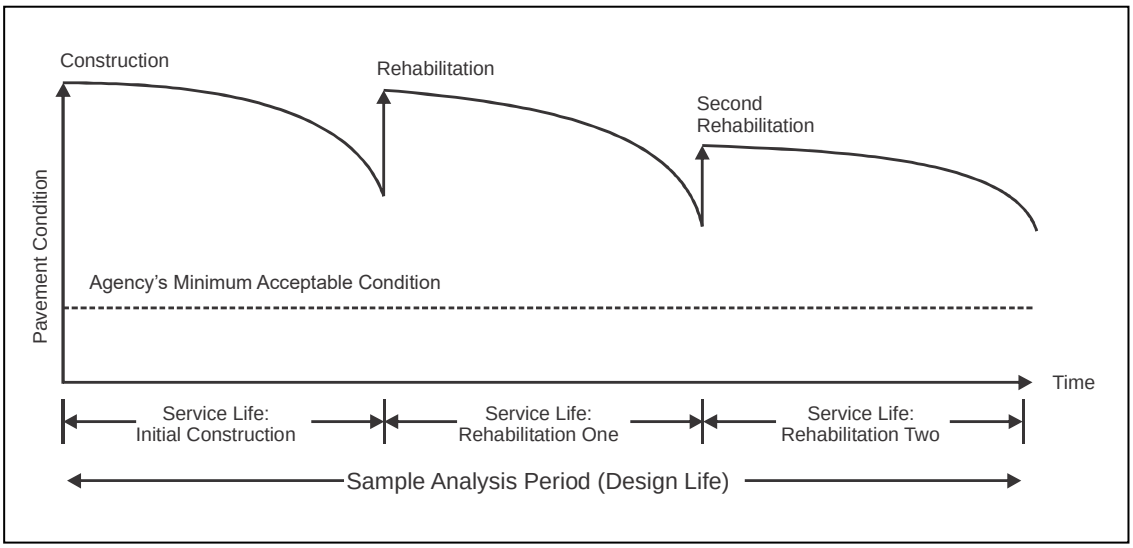


Figure 2. Service Life Cycle of Roads

5. ROAD ASSET VALUATION

The current paradigm in the management of local roads is characterized by a cycle of "build – neglect – rebuild". This describes the situation where the lack of maintenance often contributes to the increased frequency and cost of rehabilitation works. The overall effect creates a spiral of high cost and short asset life-spans. This accelerated depreciation continually drains the already inadequate levels of maintenance funding into far more expensive (often emergency) rehabilitation works. Within this context it is noticeable that:

a. There is an absence of Asset Managers with well-defined responsibilities and accountabilities; and

b. This unaccountability has allowed the above paradigm to proliferate.

Road asset management approach will reform the current local road management practices on three standard asset valuation practices:

a. Recording Road Assets on the Balance Sheets of the management entity;

b. Separating operational maintenance from capital improvement expenditures; and

c. Applying depreciation to Road Assets.

Estimated losses being incurred on provincial roads due to the currently inadequate asset management and accounting disciplines amount to approximately Php 11.1 Billion.

From an accounting viewpoint, existing assets have two types of cost that an organization will have to record in its books of accounts:

a. Maintenance is the operational cost required to keep the asset functional; and

b. Depreciation is the capital cost spread across the design-life of the asset.

On an organization's Balance Sheet, Asset Depreciation is deducted each year from the original value of the asset in accordance with a Depreciation schedule (commonly a Straight-line Schedule is used, shown graphically as a line joining the starting value on the vertical axis with the asset life expectancy on the horizontal time-line axis). Put more simply, the Depreciation account captures the annual amount required to replace the asset at the end of its life.

During the life of an asset, engineers are occasionally required to design and implement capital improvements. The costs of these are added to the residual value of the asset (its original value less its accumulated depreciation at the time of the improvement) and the depreciation clock is re-started based on the renovated value. Most vertical infrastructure in the Philippines is accounted for in this manner, but not so with most horizontal infrastructure, and definitely not with local roads. Regardless of the type of assets, Asset Managers should be responsible for both the day-to-day functionality of their assets as well as the long-term asset life. This is a fundamental governance responsibility on publicly owned assets.

National funding can offset the capital expense of local road Asset Depreciation while locally generated funds should be able to fund road Maintenance. Using Road Asset values and depreciation scheduling is possibly the most objective way to guide the amounts required from the National Government. Other criteria are used to account for the economic or poverty status of individual LGUs and their road management capacity.

For purposes of this paper, the following accounting definitions for local road assets are adopted and recognized:

a. Maintenance is the work required to enable an asset to attain its Design-Life expectancy. Maintenance funding relates to non-capital works, which by definition, do not require new Design Drawings or revised Engineering specifications;

b. Funding for Road Rehabilitation (or Renovation works), including the cost of new Engineering and Design work, must be treated as capital expenses and the improved (re-novated) value of the assets must be shown on the LGU Balance Sheet; and

c. Depreciation is the rate at which an asset loses value as it ages. Conceptually, depreciation accounts are designed to accumulate funds for the replacement of assets which have outlived their design-life. Under asset-based funding schemes, Depreciation Schedules must be applied to all new and re-novated assets, in order to provide a guide to Rehabilitation or Renovation funding requirements. It is also worth noting that the discipline of depreciation accounting can also assist with disaster recovery processes when unused depreciation accounts can be accessed quickly if needed.

The common methodology used in estimating the valuation of roads is the replacement cost approach, which utilizes the unit construction cost of a road multiplied to the road length (as shown in Equation 1 below). Where available, actual construction cost of the road may also be used as the valuation data. These road asset values are recorded in the Registry of Public Infrastructure, which is the Subsidiary Entry in the Books of Accounts.

$$\textit{Road Asset Value} = \textit{Unit Construction Cost} \times \textit{Road Length} \quad (1)$$

However, depreciation and impairments (damages or deteriorations) of road assets are not accounted for in the Books of Accounts. The usual depreciation methodology used in asset valuation in the country such as those for physical assets and properties is the straight-line depreciation. The depreciation value per year (see Equation 2) is computed as the road asset value divided by the life cycle of the road. The annual depreciation is then deducted from construction completion until the end of the life cycle, for which the road asset value will become zero (see Equation 3). This same depreciation concept is applicable to local road asset valuation.

$$Road\ Asset\ Depreciation = Road\ Asset\ Value \div Road\ Asset\ Life \quad (2)$$

$$Booked\ Road\ Asset\ Value = Asset\ Value - Asset\ Depreciation - Impairments \quad (3)$$

The depreciated road asset value with impairments taken into account should be the valuation recorded and entered in the Registry of Public Infrastructure as a Subsidiary Entry of the Books of Accounts of the National Government, and for each local government units, respectively.

6. LOCAL ROAD ASSET MANGEMENT CASE OF PRMF PARTNER PROVINCES

The Provincial Road Management Facility (PRMF) is a governance program funded by the Australian Government and implemented in partnership with the Department of the Interior and Local Government (DILG) and ten provinces in Visayas and Mindanao. The Louis Berger Group provided operational support to the PRMF as the Support Contractor. The PRMF aimed to improve the local road management systems of the partner provinces.

The average dependence of provinces on the Internal Revenue Allotment (IRA) is between 80 and 85% and it would be unrealistic to expect this figure to decline by more than 20% in the next decade. On average, the PRMF partner provinces fall within the National average for IRA dependency.

This limitation is what dictates that LGUs only have the ability to fund road maintenance but not rehabilitation: Base-line data from the 10 PRMF partner provinces shows that historic road funding levels have been equivalent to 46% of the recommended amount required for maintenance and 15% of the required rehabilitation investment, based on Asset depreciation estimates. The average annual Road Investment of the ten PRMF partner provinces is shown in Figure 3.

Figure 3. Average Annual Expenditure Diagram of PRMF Partner Provinces

The Average PRMF partner Provincial Road Network is 567 km in length. Based on the DILG recommended maintenance funding requirement of PhP100,000 per km: PhP 56.7 Million is required for Maintenance alone each year.

Historic road-works expenditure figures totaling PhP 59 Million show that, on average, the 10 PRMF partner provinces currently have the ability to fund the recommended maintenance requirement if their funds were not diminished by the more expensive and often emergency road rehabilitation requirements (see Figure 4).

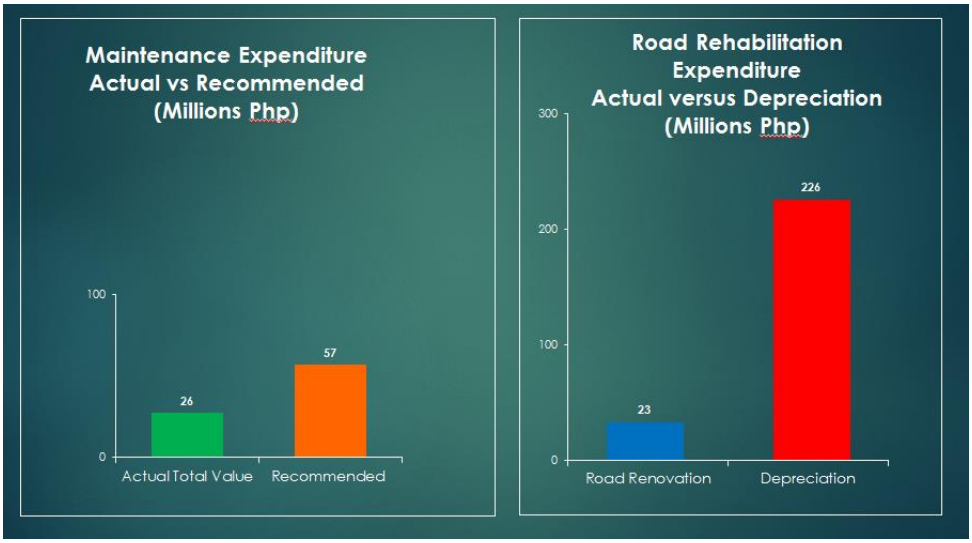


Figure 4. Average Annual Expenditure for Local Roads of PRMF Partner Provinces

It is no surprise that the actual historic maintenance expenditure (46% of the required level) has produced an average of 254 km (45%) of roads in good or fair condition (see Table 3). This suggests that 55% of the roads have either not been maintained consistently due to the above funding shift, or that some of these roads have outlived their design-life and legitimately need a new amount (and source) of capital investment. Where the latter is the case, no amount of maintenance investment can redeem the original utility of the asset. Bukidnon's persistence with the highest continuous level of maintenance funding demonstrates this fact with only 17% of its roads in good or fair condition despite continuous historic maintenance funding at 90% of the DILG recommended requirement.

The average length of Core Roads within the ten Provincial Road Networks is 248 km representing 44% of the average total provincial road network. This is the critical part of the Network, which connects core to cluster communities, producing development impacts resulting from improved access to services and economic development opportunities. These Core Roads are identified and prioritized in the Provincial Road Network Development Plan (PRNDP) of the PRMF partner provinces which is a management tool that the PRMF partner provinces are now using for road-works budgeting, planning and programming.

Table 3. Average Annual Expenditure for Local Roads of PRMF Partner Provinces

PROVINCE NAME	ADS	AKL	BHL	BUK	DDN	GUI	LDN	MOC	MOR	SDN	Ave.
Provincial Road Network (Kilometres)											
Total Network	631	285	834	852	881	121	178	504	1066	315	567
Core Roads	408	184	564	143	216	54	135	244	364	165	248
Roads in Good or Fair Condition	248	174	457	147	190	92	29	195	770	240	254
% of Network in G or F Condition	39%	61%	55%	17%	22%	76%	16%	39%	72%	76%	45%
Road Maintenance											
Ave Expenditure (PhP Millions)/yr	16	13	35	77	45	7	15	5	35	16	26
Recommended maintenance cost/ yr	63	29	83	85	88	12	18	50	107	32	57
Actual as % of Recommended Maint.	25%	45%	42%	90%	51%	58%	83%	10%	33%	50%	46%
Road Rehabilitation											
Ave Expenditure (PhP Millions)/yr	94	9	61	11	11	6	7	9	12	10	23
Annual Depreciation (estimate)	252	114	334	341	346	48	71	202	426	126	226
Rehabilitation as % of Depreciation	37%	8%	18%	3%	3%	12%	10%	4%	3%	8%	10%

In summary therefore, funding is the biggest capacity limitation in an LGU performance for its LRM mandate, at least shown by the case of PRMF partner provinces. Figure 5 will show a diagram that the PRMF partner provinces can only fund 17% of its mandate in terms of capital outlay for its local road network. However, the PRMF partner provinces can more than adequately finance the maintenance of its local road network.

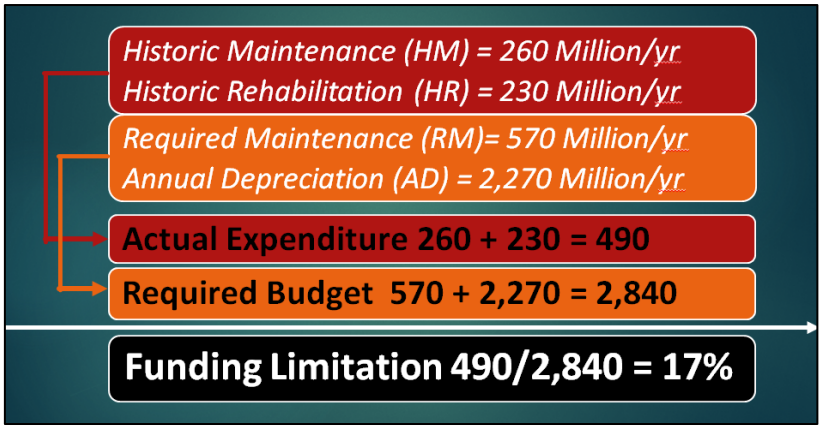


Figure 5. Funding Capacity Performance on LRM Mandates of PRMF Partner Provinces

7. LOCAL ROAD ASSET VALUATION ESTIMATES

The local road asset valuation estimates in this paper show how these requirements and definitions would appear on a realistic example based on "the Average" Provincial Road:

a. Built on terrain that is one third flat and flood prone, one third undulating, and one third mountainous; and

b. A third (32%) of the road would be sealed, as per the national average for Provincial roads.

In an ideal situation, a 10 km Provincial Road Section which cost Php 80Million to build would have the following costs per year assuming its Design-Life is 20 years:

a. Recommended Maintenance @ PhP 100,000 per km = PhP 1.0 Million per year;

b. Depreciation: PhP 80M straight line over 20 years = PhP 4.0 Million per year; and

c. Total cost for the 10 km section = PhP 5.0 Million per year.

In reality, a typical provincial road in the Philippines having the same length and construction cost would have an actual valuation of:

a. Maintenance @ 50% or PhP50,000 per km = PhP 0.5 Million per year;

b. Road Asset Life reduced by 50% to 10 years;

c. Depreciation: PhP 80M straight line over 10 years = PhP 8.0 Million per year;

d. Total cost per year for the 10 km section = PhP 8.5 Million; and

e. Net annual loss due to poor asset management = PhP 3.5 Million

This equals an annual loss of PhP 0.35 Million per km, multiplied by 31,634 km of Provincial Roads, representing an Annual loss of PhP11.1 Billion**.** This loss is largely due to the fact that Depreciation is slow and difficult to see, but it is a true cost and it must be accounted for.

The other loss exposure in the current Philippine Local Road management system is that from illegitimate or sub-standard contracting. Most of which never gets caught due to the absence of LGU Inventories and Balance Sheet scrutiny.

8. ACCOUNTING AND REPORTING GUIDELINES ON LOCAL ROAD ASSETS

LGUs, as the guardian of Local Roads which are Public Assets, must report the value of these assets every year in the Annual Report Balance Sheet. And every LGU should have its own Local Road Condition Surveys recorded in the RBIS. The PRMF engaged two independent local Certified Public Accountants (CPAs) to report on how the PRMF partner PLGUs were reporting on the value of their Provincial Roads, if they were reporting.

Both reported that PLGU Balance Sheets did not record Roads as assets. Subsequent investigation of Actual Audit Reports of the Commission on Audit (COA) on five (5) PRMF partner provinces and three (3) non-partner provinces showed that 7 of the 8 provinces did provide evidence that roads were in fact valued on Balance sheets. But in all cases the value was grossly understated compared to the significantly higher values of construction work in progress, which although recorded in Balance Sheets, did not increase the overall asset values reported in the subsequent year. And no depreciation was accounted for on Roads. The PRMF partner provinces in this audit activity were Bukidnon, Davao del Norte, Lanao del Norte, Misamis Occidental, and Misamis Oriental; whereas the other Provinces were Davao del Sur, Compostella Valley and Camiguin.

The COA clarified that Provincial Roads were only meant to be recorded on PLGU Balance Sheets during construction. All subsequent costs on such local roads are treated as operational expenses under the Electronic New Government Accounting System (eNGAS), which essentially means they would be undervalued as capital assets. In order to meet basic Asset Management Responsibility requirements, the PRMF funded the COA to conduct a Policy Review on Local Road Asset recording and depreciation, and to conduct an Audit on the 10 PRMF partner provinces following that Review. As a result, the COA issued on 23 November 2015 the Memorandum Circular No. 2015-008 – Accounting and Reporting Guidelines on Local Roads Asset Management System.

The existing NGAS Manual for LGUs provides that public infrastructures including roads shall be recorded in the Registry of Public Infrastructure and disclosed in the Notes to Financial Statements. However, Public Infrastructures are not charged any depreciation. With the adoption of the Philippine Public Sector Accounting Standards (PPSAS), infrastructure assets including road networks are required to be taken up as Property, Plant and Equipment (PPE). The annual consumption of their service potential and loss of value through depreciation and impairment are required to be recognized.

The COA Memorandum Circular No. 2015-008 now operationalizes the same asset valuation system for all local road network in the Philippines. All LGUs are now required to account and report the local road network construction and maintenance, and ensure the fair presentation of the account as infrastructure assets in its financial statements.

All LGUs are required by the COA for the complete recognition of their Local Road Network Account in their Books of Accounts within the period of four years at the following targets:

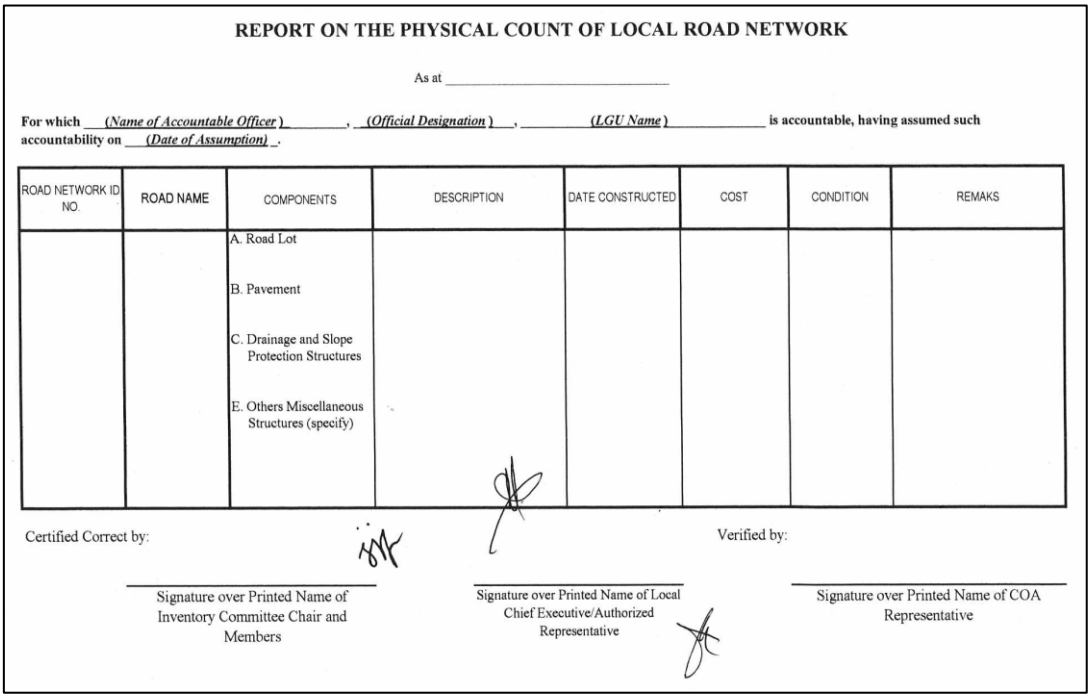
a. End of 2016 – 25% of the local road network are valued and recorded;

b. End of 2017 – 50% of the local road network are valued and recorded;

c. End of 2018 – 75% of the local road network are valued and recorded; and

d. End of 2019 – 100% of the local road network are valued and recorded.

The LGUs are now required by the COA to have a Local Road Inventory using the COA form in Figure 6. Subsequently, the LGUs are required to fully value and properly depreciate their local road network in accordance with the construction cost (or replacement cost), maintenance, useful life and impairments (Figure 7).



REPORT ON THE PHYSICAL COUNT OF LOCAL ROAD NETWORK

As at _____

For which ___ *(Name of Accountable Officer)* _____, *(Official Designation)* ___, _____ *(LGU Name)* _____ **is accountable, having assumed such accountability on** ___ *(Date of Assumption)* _.

ROAD NETWORK ID NO.	ROAD NAME	COMPONENTS	DESCRIPTION	DATE CONSTRUCTED	COST	CONDITION	REMAKS
		A. Road Lot B. Pavement C. Drainage and Slope Protection Structures E. Others Miscellaneous Structures (specify)					

Certified Correct by:

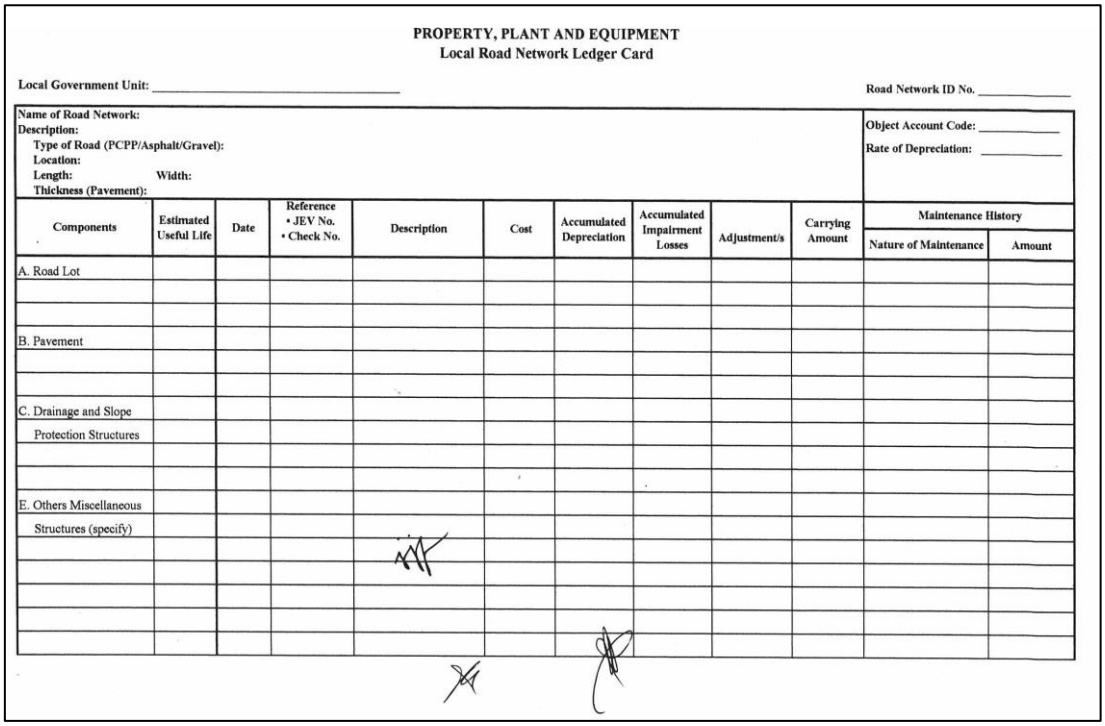
Signature over Printed Name of Inventory Committee Chair and Members

Signature over Printed Name of Local Chief Executive/Authorized Representative

Verified by:

Signature over Printed Name of COA Representative

Figure 6. COA Form Report on the Physical Count of Local Road Network



PROPERTY, PLANT AND EQUIPMENT
Local Road Network Ledger Card

Local Government Unit: _____ **Road Network ID No.** _____

Name of Road Network:
Description:
Type of Road (PCPP/Asphalt/Gravel):
Location:
Length: **Width:**
Thickness (Pavement):

Object Account Code: _____
Rate of Depreciation: _____

Components	Estimated Useful Life	Date	Reference • JEV No. • Check No.	Description	Cost	Accumulated Depreciation	Accumulated Impairment Losses	Adjustment/s	Carrying Amount	Maintenance History	
										Nature of Maintenance	Amount
A. Road Lot											
B. Pavement											
C. Drainage and Slope Protection Structures											
E. Others Miscellaneous Structures (specify)											

Figure 7. Ledger Card for the Local Road Network in the LGU Books of Accounts

The COA Memorandum Circular 2015-008 in general laid out the accounting policies for the LGUs to follow for their local road network, namely:

a. Public infrastructures shall form part of and be recorded in the books as Property, Plant and Equipment;

b. Public infrastructures include among others the road network system. This may be composed of road lot, road pavement, drainage, slope protection, and miscellaneous structures;

c. The cost of a component of a road network system shall be recognized as an asset when it is probable that the future economic benefits or service potential associated with the item will flow to the LGU; and the cost or fair value of the item can be measured reliably;

d. The road lot component of the road network system shall not be subject to depreciation;

e. Initial costs for road networks shall include all costs initially incurred in acquiring the asset and other cost items necessary to bring the asset into use;

f. Where a road network asset is acquired through non-exchange, its cost shall be measured at its fair value as at the date of acquisition;

g. Regular maintenance necessary for the upkeep of the road network system such as re-gravelling, asphalt overly, patching, etc. hall be recognized as repairs and maintenance;

h. After recognition, road networks shall be carried at its cost less any accumulated depreciation and any accumulated impairment losses;

i. Components of the road network system shall be regularly assessed for impairment;

j. Impairment shall be recognized when carrying value of the asset is higher than its recoverable service amount or recoverable amount of asset; and

k. Road network carried in the Registry shall be transferred to the Books of Accounts.

9. CONCLUSION

Local road management is a devolved mandate of local governments of the Philippines. While the LGUs enjoyed local autonomy, it came with insufficient funding mechanism for capital works for the local road network. The limited resources of LGUs are already affecting their delivery of public goods and services, which include the adequate construction and maintenance of local roads.

This paper showed that asset valuation system for local roads will improve the local fiscal system as a critical pillar of the local governments in the execution of its mandates. The paper presented the case of the PRMF partner provinces where they were able to sufficiently fund maintenance but not major capital works.

The asset valuation and the local road inventory will be an important leverage for local governments as the National Government proceeds with the policy direction of sub-sovereign transfer financing of capital works and outlays for core local road network, particularly those that impact national development objectives. The paper discussed that the registration of local road

infrastructure as an asset in the books of account (registry of public infrastructure) will improve the consolidated fiscal position of a local government. This will then in turn strengthen the creditworthiness of local governments, for which they can use in the credit financing of local road infrastructure development.

The prudent next steps that will make local road networks an avenue of inclusive growth across the country are the following:

a. Resolve local road service delivery as an unfunded devolved mandate
   - National government support on major capital works – local road construction or rehabilitation
   - Funding mechanism for local road infrastructure that is recurring, dependable, independent and transparent
   - Official definition and recognition of local road management

b. Joint memorandum circular to harmonize policies and guidelines for local road management:
   - Local road management mandates of LGUs
   - Role of NGAs in supporting the LGUs on local road management
   - Technical assistance
   - Financing framework
   - Capacity development
   - Synchronization of projects
   - Uniform standards and practices

c. National policy consensus on local road management that provides for:
   - Planning, prioritizing and sustainably managing the local road network in consideration of the envisioned socioeconomic development of the LGU.
   - Sustainable management of local road infrastructure requires regular maintenance, adequate prioritization and planning, sufficient budget and adequate contracting, financial management and monitoring procedures.
   - Planning and implementation of investments to local roads based on the function and condition of the local road viewed as a network that supports the over-all socioeconomic development of the LGU.

10. FURTHER DIRECTIONS OF THE STUDY

Local road management is an ongoing local governance reform in the Philippines. This paper on implementing an asset valuation system for local roads is therefore a work in progress and can greatly be improved once key data on local road conditions are available across the country (which is also a continuing activity of the Government of the Philippines through the Road Board).

Road asset management as a principle is already being practiced in the Philippines albeit not as extensively at the level of local roads. Most of the literature, studies and guidelines focus on national roads. More significantly, asset valuation, depreciation and accounting for local roads have not extensively been researched and deliberated on, particularly looking at the aggregate level of all local road networks in the Philippines. The prudent next step, therefore, is aggregating the valuation and depreciation of the local road networks in the country to arrive at the true and representative value of local roads in the Philippines. This of course presupposes that there is an accurate road condition inventory of all local roads in the country.

The National Road Network has been fully inventoried, valued and accounted for in the Registry of Public Assets. This was made possible by the Road and Bridge Information Application of the DPWH. A similar endeavor has been happening for local roads although at the level of provincial and city roads. The Road Board has funded and is implementing the Local Road Centerline and

Condition Survey of all provincial and city roads in the country under the Motor Vehicle User Charge (MVUC) fund. These data are to be uploaded in the Road and Bridge Information System (RBIS), which is a comparable system of the DPWH RBIA. The RBIS is programmed to automatically compute the asset valuation and depreciation and accounting report of the inventoried provincial and city roads. Once the local road condition survey is done across the country, there should be a study on the over-all valuation of local roads and how it varies across the LGUs depending on their technical and fiscal capacity. This will paint a true picture of the state of local road management in the country, which will guide and inform the reform and investment initiatives of the Government of the Philippines both at the national and local level, as well as the country's development partners.

It will also be interesting to see whether the COA Local Road Asset Valuation and Accounting Guideline and Methodology will be responsive to actual local road conditions and the institutional capacity of local governments in the country. A separate capacity development study on local governments' capability to value and account for local road assets will be a worthwhile endeavor.

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